

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

1. (Currently amended) A method for shaping a baseband signal comprising:
  - providing a plurality of coefficient memories, each having a plurality of coefficient values representing filter response waveform values;
  - determining a coefficient memory address for each of the coefficient memories;
  - addressing each of the plurality of coefficient memories;
  - retrieving an addressed coefficient value from each of the plurality of coefficient memories;
  - providing a negative value for each of the retrieved ones of the plurality of coefficient values;
  - selecting in response to the baseband signal for each coefficient value, one of the retrieved coefficient value and the negative value; and
  - summing the selected values for providing a shaped signal;
  - wherein coefficient values at an instance in time are each indicative by a digital word and wherein one of the digital words and a corresponding negative value of the digital word are selected in response to the baseband signal, and the selected digital words are summed for providing a shaped baseband signal.
2. (Original) The method of claim 1 further comprising sharing the plurality of coefficient memories for shaping both an in-phase baseband signal and a quadrature baseband signal.
3. (Previously Presented) The method of claim 2 wherein sharing the plurality of memories comprises:
  - retrieving one of the coefficient values corresponding to the in-phase baseband signal on a first edge of a clock signal; and
  - retrieving one of the coefficient values corresponding to the quadrature baseband signal on a different second edge of the clock signal.

4. (Original) The method of claim 3 wherein the clock signal comprises a digital to analog converter clock signal.

5. (Original) The method of claim 1 wherein determining a coefficient memory address comprises:

determining an increment for providing a predetermined number of samples for each of a plurality of symbols comprising the baseband signal;

and incrementing an address counter in response to the predetermined number of samples for each symbol and a predetermined coefficient memory size.

6. (Previously Presented) The method of claim 1 wherein the baseband signal comprises an in-phase signal and a quadrature signal;

wherein selecting for each coefficient value comprises selecting an in-phase value in response to the in-phase signal and selecting a quadrature value in response to the quadrature signal; and

wherein summing the selected values comprises summing the selected in phase values for providing a shaped in phase signal and summing the selected quadrature values for providing a shaped quadrature signal.

7. (Original) The method of claim 1 wherein the negative value comprises at least one of:

a 2's complement value;

an offset binary value; and

a signed magnitude value.

8. (Original) The method of claim 1 wherein providing a plurality of coefficient memories comprises combining at least two filter coefficients for forming the plurality of coefficient values such that coefficient memory storage is minimized.

9. (Previously Presented) The method of claim 1 wherein the plurality of coefficient memories provided further provide coefficient values corresponding to a plurality of roll-off factors.

10. (Previously Presented) The method of claim 1 wherein the plurality of coefficient memories further includes one of:

the sum of a first filter response value and a second filter response value;  
and the difference of a first filter response value and a second filter response value; and  
wherein the step of retrieving an addressed coefficient value retrieves one of the sum of a first filter response value and a second filter response value and the difference of a first filter response value and a second filter response value.

11. (Original) The method of claim 10 wherein the first filter response and the second filter response are symmetric.

12. (Previously Presented) The method of claim 10 wherein retrieving coefficient values comprises:

providing an address counter having a plurality of logic outputs for addressing the coefficient memories; and

determining for each coefficient memory whether to retrieve one of the sum of a first filter response value and a second filter response value and the difference of a first filter response value and a second filter response value in response to selected ones of the logic outputs.

13. (Original) The method of claim 12 further comprising:

providing a logic circuit having an output, a first input coupled to a logic output of the address counter, a second input coupled to an in-phase data symbol bit and a third input coupled to a quadrature data symbol bit;

determining whether to select one of the retrieved value and the negative value in response to the output of the logic circuit.

14. (Original) The method of claim 10 wherein summing the selected value comprises:
- providing a plurality of adder stages, each adder coupled to a pipeline register;
  - clocking the pipeline register at a digital to analog converter (D/A) rate; and
- scaling and formatting the summed values after a final adder stage.
15. (Previously Presented) A method for shaping a baseband signal comprising:
- providing a plurality of coefficient memories, each having a plurality of coefficients values representing filter response waveform values;
  - determining a coefficient memory address for each of the coefficient memories;
  - addressing each of the plurality of coefficient memories;
  - retrieving an addressed coefficient value from each of the plurality of coefficient memories;
  - providing a negative value for each of the retrieved ones of the plurality of coefficient values;
  - selecting in response to the baseband signal for each coefficient value, one of the retrieved coefficient value and the negative value; and
  - summing the selected values for providing a shaped signal; and
- wherein the plurality of coefficient memories further includes one of the sum of a first filter response value and a second filter response value and the difference of a first filter response value and a second filter response value; and
- wherein the baseband signal is clocked at a symbol rate and the retrieval of coefficients is clocked at a digital to analog converter (D/A) rate such that the number of retrievals per coefficient equals the D/A rate divided by the symbol rate.
16. (Original) The method of claim 10 wherein the filter waveform comprises a raised cosine.
17. (Original) The method of claim 10 wherein the filter waveform comprises a square root raised cosine.

18. Cancelled

19. (Currently Amended) The method of claim [18]<sup>1</sup> further comprising combining at least two filter coefficients for forming the plurality of coefficient values indicated by each digital word such that coefficient memory storage is minimized.

20. (Currently amended ) A device comprising:

a plurality of coefficient memories, each memory having an input address bus, a multiplexor input and a coefficient value output;

a plurality of first registers, each having a digital to analog (D/A) clock input and an input coupled to a respective one of the coefficient value outputs, and an output;

a plurality of negative value circuits, each circuit having an input coupled to a respective one of the first register outputs, and an output;

a plurality of 2:1 multiplexors, each having a first input coupled to an output of a respective one of the plurality of first registers [register outputs] and having a second input coupled to an output of a respective one [of the output] of the plurality of negative value circuits;

a plurality of second registers, each having a digital to analog (D/A) clock input and an input coupled to a respective one of the outputs of the plurality of 2:1 multiplexors, and an output; and

an adder having a plurality of inputs coupled to respective ones of the plurality of second registers and an output to provide a baseband signal;

wherein coefficient values at an instance in time are each indicative by a digital word and wherein one of the digital words and a corresponding negative value of the digital word are selected in response to the baseband signal and the selected digital words are summed to provide the baseband signal.

21. (Original) The device of claim 20 wherein each of the plurality of negative value circuits comprises at least one of: a 2's complement logic element; an offset binary logic element; and a

signed magnitude logic element.

22. (Original) The device of claim 20 further comprising a coefficient address generator having an output coupled to a coefficient memory input address bus, the input address having a plurality of address lines.

23. (Currently amended) [The device of claim 22] A device comprising:

a plurality of coefficient memories, each memory having an input address bus, a multiplexor input and a coefficient value output;

a plurality of first registers, each having a digital to analog (D/A) clock input and an input coupled to a respective one of the coefficient value outputs, and an output;

a plurality of negative value circuits, each circuit having an input coupled to a respective one of the first register outputs, and an output;

a plurality of 2:1 multiplexors, each having a first input coupled to an output of a respective one of the plurality of first registers [register outputs] and having a second input coupled to an output of a respective one [of the output] of the plurality of negative value circuits;

a plurality of second registers, each having a digital to analog (D/A) clock input and an input coupled to a respective one of the outputs of the plurality of 2:1 multiplexors, and an output;

an adder having a plurality of inputs coupled to respective ones of the plurality of second registers; and

a coefficient address generator having an output coupled to a coefficient memory input address bus, the input address having a plurality of address lines; and

wherein the coefficient address generator further comprises:

an adder having a plurality of address output lines;

an address register coupled to the plurality of address output lines and having clocked address line outputs and an address counter most significant bit output;

an exclusive or logic gate (XOR) array having address inputs coupled to the clocked address lines outputs and an address counter most significant bit input coupled to

the address counter most significant bit output, and outputs coupled to a corresponding plurality of the plurality of address lines of the coefficient memory address bus; and  
an XOR multiplexor having inputs coupled a pair of baseband bit signals and an output coupled to one of the plurality of address lines of the coefficient memory address bus.